

IN THE CLAIMS

Please amend the claims as follows:

1-5. (Cancelled)

6. (Previously Presented) An apparatus comprising:

a transparent plate having fiducials on a surface, the transparent plate adapted to be positioned beneath a panel having a plurality of transparent segments so that a die suspended above the panel and having a die alignment mark can be aligned and positioned on one of the transparent segments relative to at least one of the fiducials.

7. (Original) The apparatus of claim 6, wherein the transparent plate is made of glass.

8. (Original) The apparatus of claim 7, wherein the glass is quartz.

9. (Original) The apparatus of claim 6, wherein the fiducials are chrome.

10. (Previously Presented) An apparatus comprising:

a movable pick-up head capable of holding, positioning and releasing a die, the die having an alignment mark;

a panel support member adapted to movably support a panel in a panel support plane, the panel having upper and lower surfaces and an array of cavities each open at the upper surface and each having a transparent bottom;

a transparent plate with fiducials arranged at locations corresponding to desired die locations on the transparent bottoms of the cavities of the panel, the transparent plate arranged adjacent the panel support plane opposite the panel from the movable pick-up head; and

an optical vision system adapted to image a die through the transparent plate and through the transparent bottom of one of the cavities and to image at least one fiducial and generate an electrical signal corresponding to the position of the at least one fiducial.

11. (Original) The apparatus of claim 10, further including a controller electrically connected to the pick-up head and the optical vision system, the controller adapted to control the movement of the pick-up head in response to the electrical signal.
12. (Original) The apparatus of claim 10, wherein the transparent plate is made of glass.
13. (Original) The apparatus of claim 11, wherein the glass is quartz.
14. (Original) The apparatus of claim 10, wherein the fiducials are formed by electron-beam lithography.
15. (Previously Presented) A method comprising:
providing a panel with a plurality of cavities, each cavity including an opening to a panel upper surface and a transparent bottom at a panel lower surface;
arranging adjacent the panel lower surface a transparent plate having an upper surface with a plurality of fiducials formed thereon, with at least one fiducial aligned with the each cavity transparent bottom and serving as a local fiducial; and
imaging the local fiducial to align a die to one of the plurality of cavities.
16. (Original) The method of claim 15, further including determining a position of the die relative to the local fiducial based on said imaging.
17. (Original) The method of claim 16, including generating an electrical signal corresponding to the die position relative to the local fiducial.
18. (Original) The method of claim 17, further including aligning the die with the local fiducial.

19. (Original) The method of claim 18, further including:
inserting the die into the opening of the cavity associated with the local fiducial; and
contacting the die to the transparent bottom.
20. (Original) The method of claim 15, including forming the fiducials using electron-beam lithography.
21. (Original) A method comprising:
forming fiducials on an upper surface of a transparent plate;
arranging the transparent plate relative to a panel having multiple cavities formed in a panel upper surface, with each cavity having a transparent bottom, said arranging including aligning each fiducial beneath a corresponding one of the multiple cavities; and
imaging a select one of the fiducials corresponding to a select one of the cavities to establish a die position relative to the select one of the cavities.
22. (Original) The method of claim 21, including making the transparent bottom adhesive.
23. (Original) The method of claim 21, including aligning the die alignment mark to the select fiducial.
24. (Original) The method of claim 21, including imaging the die alignment mark through the transparent bottom.
25. (Previously Presented) The method of claim 23, further including placing the die onto the transparent bottom of the select cavity.
26. (Cancelled)

27. (Currently Amended) ~~The apparatus of claim 26, wherein the means for aligning further comprises:~~ An apparatus comprising:

a panel support member adapted to support a panel in a panel support plane, the panel having upper and lower surfaces and an array of cavities each open at the upper surface and each having a transparent bottom;

means for aligning a die with respect to one of the cavities.

transparent fiducial means for providing alignment indicia; and

optical imaging means for obtaining position data for the die and the alignment indicia.

28. (Previously Presented) The apparatus of claim 27, wherein the optical imaging means obtains images through the transparent fiducial means and the transparent bottom.